Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A system comprising:

~~a testing~~ system to test whether a device under test conforms to a physical layer communications standard, the testing system ~~having~~ comprising:

a plurality of lane cards to transmit data on a plurality of data lanes to the device under test according to a test pattern and according to the physical layer communications ~~standard~~ standard;

a deskew card to prepare deskew information according to the test pattern and independent of the lane cards according to the physical layer communications ~~standard~~ standard;

a computer coupled to the testing system.

2. (Currently amended) The system of claim 1 wherein the test pattern is ~~testing system is further to generate~~ arbitrarily long ~~test patterns on the data lanes~~.

3. (Currently amended) The system of claim 1 wherein the deskew card ~~testing system~~ is further to generate the test pattern ~~patterns on each of the data lanes~~ independent of the ~~other~~ data lanes.

4. (Currently amended) The system of claim 1 wherein the number of data lanes is 16 and the physical layer communications standard is the Serdes Framer Interface Level 5 (SFI-5) ~~SFI-5~~ standard.

5. (Original) The system of claim 1 wherein the lane cards each transmit data on two data lanes.

6. (Original) The system of claim 1 wherein the lane cards each include two lane Field Programmable Gate Arrays.

7. (Currently amended) The system of claim 1 wherein the computer includes software which when executed provides a management user interface that allows a user to access the ~~testing~~ system.

8. (Currently amended) A testing system to test whether a system under test conforms to a physical layer communications standard, the testing system comprising:

a plurality of lane cards to transmit data on a plurality of data lanes to the system under test according to a test pattern and according to the physical layer communications ~~standard~~ standard, and to receive data on the plurality of data lanes from the system under ~~test,~~ test;

a deskew card to prepare outgoing deskew information for outgoing data independent of the lane cards according to the test pattern and according to the physical layer communications ~~standard~~ standard, and to evaluate incoming deskew information

included with received incoming data independent of the lane cards according to the physical layer communications standard.

9. (Currently amended) The testing system of claim 8 wherein the testing system generates arbitrarily long test data ~~patterns~~ on the data ~~lanes.~~ lanes according to the test pattern.

10. (Currently amended) The testing system of claim 8 wherein the testing system generates test data according to the test ~~patterns~~ pattern on each of the data lanes independent of the other data lanes.

11. (Currently amended) The testing system of claim 8 wherein the number of data lanes is 16, and the physical layer communications standard is the Serdes Framer Interface Level 5 (SFI-5) ~~SFI-5~~ standard.

12. (Original) The testing system of claim 8 wherein each lane card transmits data on two data lanes.

13. (Original) The testing system of claim 8 wherein each of the lane cards include two lane Field Programmable Gate Arrays.

14. (Original) The testing system of claim 8 having a computer coupled thereto.

15. (Original) The testing system of claim 14 wherein the computer includes software which when executed provides a management user interface that allows a user to monitor and control the testing system.

16. (Currently amended) A method for transmitting test data according to a physical layer communications standard comprising:

starting a lane ~~counter~~ counter;

selecting a selected test pattern based on the lane ~~counter~~ counter;

selecting a pattern seed based on the selecting and the lane ~~counter~~ counter;

generating a current generated test pattern based on the pattern seed and the selected test ~~seed~~ seed;

transmitting the current generated test ~~pattern~~ pattern;

generating a next generated test pattern based on the selected test pattern and the current generated ~~pattern~~ pattern;

storing the next generated test ~~pattern~~ pattern.

17. (Currently amended) The method of claim 16 further comprising:

incrementing the lane ~~counter~~ counter;

selecting the selected test pattern based on the lane ~~counter~~ counter;

preparing the pattern seed based on the selected test ~~pattern~~ pattern;

generating the current generated pattern based on the selected test pattern and the next generated test ~~pattern~~ pattern;

evaluating whether to transmit the current generated pattern or a header based on the lane, the evaluating based on the lane ~~counter~~ counter;

transmitting either the current generated pattern or the header based on the evaluating.

18. (Original) The method of claim 17 wherein the evaluating comprises selecting the header when a value of the lane counter corresponds to a deskew lane, and selecting the current generated pattern when a value of the lane counter corresponds to a data lane.

19. (Currently amended) A method for receiving test data according to a physical layer communications standard comprising:

starting a lane ~~counter~~ counter;

receiving incoming ~~data~~ data;

synchronizing the incoming ~~data~~ data;

selecting a test pattern based on a value of the lane ~~counter~~ counter;

evaluating whether to use the incoming data or a stored next generated pattern to generate an anticipated ~~pattern~~ pattern;

generating an anticipated pattern based on the evaluating and the test ~~pattern~~ pattern;

comparing the generated anticipated pattern with the incoming ~~data~~ data;

flagging an error condition if the generated anticipated pattern and the incoming data do match based on the ~~comparing~~ comparing.

20. (Currently amended) The method of claim 19 further comprising:

generating the next pattern based on the test pattern and the anticipated generated ~~pattern~~ pattern;

storing the next generated pattern as a stored next generated ~~pattern~~ pattern;

incrementing the lane ~~counter~~ counter;

21. (Currently amended) A transmitter circuit to transmit deskew data conforming to a physical layer communications standard, the transmitter circuit comprising:

a lane counter coupled to a pattern select unit a pattern seed unit, and a current pattern unit, the lane counter to provide a lane value from 0 to 16 and to increment the lane value; ~~value from 0 to 16~~

the pattern select unit to select a pattern based on the lane value and to provide a selected pattern to the pattern seed unit, a current pattern generation unit and a next pattern generation ~~unit~~ unit;

the current pattern unit to store a next generated pattern generated by the next pattern generation unit as a stored current pattern, and to receive the lane value from the lane ~~counter~~ counter;

the pattern seed unit to provide a pattern seed to a first mux based on the selected pattern and the lane ~~value~~ value;

the first mux to select between the pattern seed received from the pattern seed unit and the stored current pattern received from the current pattern unit, and to provide input to the current pattern generation ~~unit~~ unit;

the current pattern unit to generate a current generated pattern based on input received from the first mux and the selected ~~pattern~~ pattern;

the next pattern generation unit to generate the next generated pattern based on the current generated pattern and the selected ~~pattern~~ pattern;

a second mux to select between transmitting a header or the current generated pattern based on the lane value.

22. (Currently amended) A receiver circuit to receive deskew data transmitted according to a physical layer communications standard, the receiver circuit comprising:

a receive line to receive incoming data, the receive line coupled to a frame synchronization unit and a compare ~~unit~~ unit;

the frame synchronization unit to identify a data location in the incoming data, and to provide the data location to a lane counter and a pattern state ~~machine~~ machine;

the ~~a~~ lane counter to provide a lane value in the range from 0 to 16 and to increment the lane value ~~from 0 to 16~~, the lane counter to provide the lane value to a pattern select unit, a current pattern unit, and the pattern state ~~machine~~ machine;

the pattern select unit to select a selected pattern based on the lane value and to provide the selected pattern to an anticipated pattern generation unit and a next pattern generation ~~unit~~ unit;

the current pattern unit to receive a next generated pattern from the next pattern generation unit and store the next generated pattern as a current pattern, the current pattern unit to provide the current pattern to a mux based on the lane ~~value~~ value;

the mux to select between the current pattern and the incoming data based on ~~a~~ an output from the pattern state ~~machine~~ machine, and to provide either the current pattern or the incoming data to the anticipated pattern generation unit as a mux selection;

the anticipated pattern generation unit to receive the mux selection from the mux and to generate an anticipated generated pattern based on the mux selection;

the compare unit to evaluate whether the incoming data corresponds to the ~~anticipate~~ anticipated generated pattern, and to provide a result and the incoming data to the pattern state machine.